

- I. Project Title: **Identification and Curation of Larval Fish by Colorado State University Larval Fish Laboratory.**
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- III. Project Summary: This ongoing project provides for (1) final identification and cataloging of preserved fish collections for Project 22F (Yampa and Middle-Green Colorado Pikeminnow and Razorback Sucker Larval Abundance), (2) incidental taxonomic services and consultation, and (3) ongoing maintenance and management of the growing Upper Colorado River Basin (UCRB) portion of the LFL Collection, including controlled access to and use of collection holdings and data by UCRB and other researchers.
- IV. Study Schedule: Ongoing project since 1995. Specified project collections (currently Project 22F) are processed annually and the resultant data provided to the principal investigator as soon as logistically possible after the collections are received. General collection maintenance activities (e.g., fluid level and container checks) are conducted each fall or winter; other maintenance concerns are addressed as needed and remaining backlog collections cataloged as time permits. Collection management, including response to requests for loans or collection holdings, and provision of limited other taxonomic services and consultation for other Recovery Program projects and researchers is ongoing as needed.
- V. Relationship to RIPRAP: This project is related to General Recovery Program Support Action Plan V (monitor populations and habitat and conduct research to support recovery actions, research, monitoring, and data management). Identification of Project 22F collections contributes to Task V.A (measure and document population and habitat parameters to determine status and biological response to recovery actions). The remainder of the project specifically addresses Task V.E (provide for long-term care, cataloging, and accessibility of preserved specimens) and, in that preserved specimens are the ultimate natural history database, contributes to current Task V.A.1 (conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program).

VI. Accomplishments of FY 2006 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings: The FY 2006 goals and objectives of this ongoing project are being met.

Task 1, Taxonomic Services—For Project 22F, we processed 207 preserved 2005 drift-net collections from the Yampa and Green Rivers in Echo Park (482 lots, 2,006 specimens). Data have been forwarded for analysis and reporting and all specimens have been catalogued and shelved as part of the LFL Collection. Incidental requests from UCRB researchers for taxonomic assistance or consultation on larval-fish sampling and collection handling matters were addressed as received.

Task 2, Ongoing Collection Maintenance and Management—As of September 30th, we have (1) conducted our annual fluid level and condition check, (2) resolved problems with our adaptation of the *Specify* collection catalogue and management program, (3) worked on finding and correcting errors in our catalog database, (4) made collection holdings and data available to UCRB researchers and other interested parties, and (5) added a total of 4,179 lots of fish (80,539 specimens) from UCRB collections or investigations to the catalogued collection (Appendix A), including 1,138 lots of fish that were taken from Dinosaur National Monument and cross-catalogued with the National Park Service. We now maintain and manage 96,456 lots of cataloged fish collected from the UCRB or used for UCRB Recovery Program investigations (3,267,797 specimens). These holdings represent 98% of all LFL cataloged specimens. An updated *Access* database version of our catalog for these holdings (selected fields, flat file) was submitted to the Interagency Database Management Program (IDMP) archive.

In our continuing effort to pursue improved and more spacious facilities for the LFL Collection and better assure it's permanency, we, with the curators of other Colorado State University natural history collections, encouraged the university administration to renew plans for consolidation of university natural history research collections in a new or specially renovated building. To that end we worked on a new university proposal to help fund such and participated on a Provost-appointed committee on the desirability of co-location of the collections with recommendations for improving collections facilities.

VII. Recommendations: We recommend continued annual support of Project 15 with sufficient funds for processing newly preserved collections covered by this project, incidental taxonomic services and consultation, and on-going maintenance and management (curation) of all UCRB specimens held by LFL. Also, the scope of work for FY 2008 may need to include provisions for additional shelving to accommodate the growing collection.

VIII. Project Status: On-track and ongoing.

IX. FY 2006 Budget Status

- A. Funds Provided: \$49,200
- B. Funds Expended: \$49,200
- A. Difference: \$0
- B. Percent of the FY 2006 work completed, and projected costs to complete:
100%, \$0
- C. Recovery Program funds spent for publication charges: \$0

X. Status of Data Submission (Where applicable): Data for Project 22F collections were internally submitted to Kevin Bestgen in November and December, 2005. National Park Service cross-catalog data were submitted to Ann Elder of Dinosaur National Monument on December 29, 2005, and October 6 and 25, 2006. An updated *Access* database version of our catalog for UCRB holdings (selected fields, flat file) was prepared and submitted to the IDMP archive on November 6, 2006.

XI. Signed: Darrel E. Snyder November 7, 2006
Principal Investigator Date

Signed: Sean C. Seal November 7, 2006
Principal Investigator Date

Signed: Kevin R. Bestgen November 7, 2006
Principal Investigator Date

APPENDIX A:

Study-year sets of Upper Colorado River Basin collection-species lots cataloged as part of the Colorado State University Larval Fish Laboratory Collection from October 1, 2005 through September 30, 2006 (4,179 lots; 80,539 specimens).

Catalog Numbers	Field Numbers	Description of Sample Sets
76826	LFL-92YA-701D3 *	92Larvae,DR,Yampa R,Echo Pk,DNM,CO
94622-94657	LFL-05GR-7261 to 8143	05 Larvae,DR,Green R, Echo Pk,DNM,CO
94658-95103	LFL-05YA-6101 to 8153	05Larvae,DR,Yampa R,Echo Pk,DNM,CO
95104-96024	FWS/V-05RZ-001 to 192	05 Larvae, LT, Green R, Vernal, UT
96691-97130	FWS/GJ-05GU-001 to 120	05 Larvae, SN, Gunnison R., CO
97131-97192	FWS/GJ-05CO-121 to 146	05 Larvae, SN, Colorado R., CO & UT
97194-97411	FWS/GJ-05CO-146 to 213	05 Larvae, SN, Colorado R., CO & UT
97512-97542	FWS/V-99GR-CH01 to 14	99 CH, SN, Green R., Vernal, UT
97543-97544	CDOW/LFL-79G *	Reference CH transferred to Study CH
97545-97546	CDOW/LFL-79W *	Reference CH transferred to Study CH
97547-97548	FWS/V-04GR-CH01 to CH02	04 CH, SN, Green R., Vernal, UT
97549-97605	FWS/V-04YA-CH01 to CH13	04 CH, SN, Yampa R., Vernal, UT
97606-97759	LFL-05GR-LW001 to LW010	05 SN, Green R, Lodore-Whirlpool, CO
97761-98240	LFL-05GR-LW012 to LW047	05 SN, Green R, Lodore-Whirlpool, CO
98241-98251	LFL-05YA-LW001 to LW002	05 SN, Yampa R, Lodore-Whirlpool, CO
98252-98253	LFL-05GR-TN001 to TN002	05 TR, Green R, Lodore-Whirlpool, CO
98254-98255	LFL-05GR-LW004*	05 SN, Green R, Lodore-Whirlpool, CO
98256-98257	LFL-05YA-LW001*	05 SN, Yampa R, Lodore-Whirlpool, CO
98258-98261	LFL-05GR-LW009, 016, & 017	05 SN, Green R, Lodore-Whirlpool, CO
98710-98782	WBNFH-HB80A-001to043,UNK	80 HB, Cult,Willow Beach NFH,Study/Ref
98783-98886	WBNFH-HB80B-001to047,UNK	80 HB, Cult,Willow Beach NFH,Study/Ref
98887-98951	WBNFH-HB81A-001to010,UNK	81 HB, Cult,Willow Beach NFH,Study/Ref
98952-99047	WBNFH-HB81B-001to042,UNK	81 HB, Cult,Willow Beach NFH,Study/Ref
99048-99050	WBNFH-HB-BR-UNK	?? HB, Cult, Willow Beach NFH, Ref Ser

Catalog Numbers	Field Numbers	Description of Sample Sets
99051-99214	WBNFH-BT81A-001 to 002, BT81A-030 to 049, BT81B-001 to 008, BT81-UNK	81 BT, Cultured, Willow Beach NFH, Study and Reference Series
99216-99242	WBNFH-BT81A-003 to 029	81 BT, Cult, Willow Beach NFH, Study/Ref
99243-99419	WBNFH-BTRT80001 to 80100	80 BT x RT, Cultured, Willow Beach NFH, Study and Reference Series
99420-99527	WBNFH-BTHB80001 to 80060	80 BT x HB, Cultured, Willow Beach NFH, Study and Reference Series
99528-99541	MISCCH-UCRB-CAS	?? Gila spp., Cleared & Stained Study Ser
99542-99546	WBNFH-BTRT82001 to 82005	82 BT x RT, Cult, Willow Beach NFH, Ref
99547-99550	WBNFH-BTHB82001 to 82004	82 BT x HB, Cult, Willow Beach NFH, Ref
99551-99553	WBNFH-HB80B-044,045,UNK*	80, HB, Cult, Willow Beach NFH, Study/Ref
99554	WBNFH-HB81A-UNK *	81, HB, Cult, Willow Beach NFH, Study Ser
99555-99556	WBNFH-BTHB82005, 006 *	82 BT x HB, Cult, Willow Beach NFH, Ref
99557-99558	WBNFH-HB-BR-UNK *	??, HB, Willow Beach NFH, Study Series
99559-99562	MISCCH-UCRB-CAS *	?? Gila spp., Cleared & Stained Study Ser
99563	HNFH-HB82-UNK	82 HB, Cult, Hotchkiss Fish Hatchery, Ref
99564-99570	WBNFH-BTHB-UNK	?? BT x HB, Cult, Willow Beach NFH, Ref
99571-99580	WBNFH-BTRT-UNK	?? BT x RT, Cult, Willow Beach NFH, Ref
99581-99594	CULT-BTBTHB82-1 to 7, -HBBTHB82-1 to 7	82 BT & HB x BTHB Backcross, Cultured, Willow Beach NFH, Reference Series
99595-99608	CULT-BTBTRT82-1 to 7, -RTBTRT82-1 to 7	82 BT & RT x BTRT Backcross, Cultured, Willow Beach NFH, Reference Series
99609-99638	AGFD/DK-HB89-01 to 05, -CS	89 HB, SN, Colo R & Little Colo R, AZ
99962-100023	RTM-79WR-RT	79 RT, SN, White R, Study Series
100024-119	RTM-82YA-RT02 to 20, -RTCS	82 RT, SN, Yampa R, Study & Ref Series
100120-339	RTM-83CULT-RT01 to 63,UNK	83 RT, Cultured, Study & Reference Series

* Separately cataloged portion of a set of previously cataloged collections.